

REMARKS

Claims 1-3, 5-11, 13-18 and 21-22 are presented for prosecution. Claims 1, 8 and 21 are currently amended. Claims 4, 12, and 23 are currently cancelled. Claims 19-20, 24-27 were previously cancelled.

Claims 1-18, and 21-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Akiyama et al. (U.S. Pat. 5,594,653) in view of Kim (U.S. Pat. 5,885,010). Specifically, the Office Action concedes that Akiyama fails to teach the automatic clearing of the receive buffer immediately after the state detection means detects the first state without need of a real-time buffer clearing command from the computer. The Office Action, however, explains that Kim shows a printer with a force stop control button that responds to external actuation of the button by, "immediately stopping transferring of printing media of paper... and stopping the printing operation, and transmitting an error signal back ... to the computer to interrupt the data transfer (S2) and then clear the received data stored in the RAM 40 without a need of a real-time buffer clearing command from the computer (Fig. 2, col. 3, lines 26-45)". The Office action further asserts that Kim, like Akiyama, teaches, "a first state in which data is received and the received data is not printed", and that therefore it would be obvious to one skilled in the art to combine the teaching of Kim in the clearing means in Akiyama.

Applicants respectfully disagree. Firstly, Akiyama explains that in his prior art, when a printer goes off-line, the printer terminates communication with a host computer. Akiyama explains that this prevents the host computer from being able to determine the printer's problem, or providing any means for resolving the printer's problem. Akiyama explains that as a result, manual intervention from a human operator is required to resolve the printer's problem, and re-establish communications with the host computer. Akiyama further explains that the printer's human operator may not know how to identify and/or resolve the printer's problem, and this may cause an unacceptable delay before the printer is back on-line.

Akiyama's solution is a printer that maintains an open line of communication with the host computer even while the printer is off-line. As a result, the host computer can interrogate the printer to determine the source of the

problem, and attempt corrections electronically, or at least suggest solutions to the human operator. The point is, however, that Akiyama's invention would cease to function for its intended purpose if communications with the host computer were terminated while the printer is off-line since this is exactly a problem Akiyama seeks to resolve. Basically, Akiyama requires that his printer maintain communications with the host computer even when the printer is off-line.

Kim, on the other hand, explains that a printer will typically print all the contents of its print buffer prior to stopping any printing operation. Kim explains that when a human user wishes to stop a printing operation (perhaps because of an error in the print contents), the printer will continue to operate even after the user submits a print cancellation command. Kim explains that this is because even after the host computer has been instructed to stop sending print data to the printer, the printer's print buffer must still be processed (i.e. the print buffer must be emptied prior to the printer finishing its current print operation). Therefore, Kim suggests a "force stop" button that will include a real-time command for clearing the print buffer in addition to interrupting the current print operation.

Basically, Kim shows a reset button that will instruct the host computer to stop sending print data, expel the current printing sheet, and delete the print buffer. Kim explains that all contents received from the host computer are automatically stored in the receive buffer, and that the contents of the received buffer are automatically processed for printing, so communication with the host computer must be stopped in order assure that no new print data is received after actuation of the "force stop" button until a clear interrupt signal is sent to the host computer (S7, Fig. 2). Thus, Kim's invention would cease to function for its intended purpose if communication with the host computer were maintained after actuation of the force stop button.

Applicants contacted the Examiner to ask if it had been noticed that the teachings of Akiyama are in direct conflict with those of Kim. Applicants attempted to explain that it is not obvious to combine the teachings of Kim with those of Akiyama since their requirements are in direct conflict with each other. Basically, Kim requires that communications with the host computer be terminated in order to erase the print buffer and assure termination of the current print

operation. While Akiyama, on the other hand, requires that communications with the host computer be maintained so that the host computer can interrogate the printer, determine the source of a problem, and determine the course of action required to resolve the problem. Akiyama thus requires that the host computer make the decision of how to proceed, including whether the host computer wishes to submit a real-time buffer clear command to the printer.

The Examiner, however, suggested that Kim also teaches a state where print data is received and the print data is not printed. The Examiner explained that following the actuation of the "force stop" button, Kim's printer is transitioned from a printing state to a non-printing state. During the transition from the printing state to the non-printing state there a time period wherein data is being transmitted from the host computer (prior to the printer terminating communication with the host computer), and following the termination of the communication with the host computer, the contents of the print buffer are erased. The Examiner suggested that the erasing of the print buffer is tantamount to a state where print data is received and the received data is not printed.

Applicants respectfully disagree, and suggest that the Office Action may be interpreting the term operating "state" more broadly than is reasonable. As it is known in the art, a state machine (i.e. a design mechanism used to define operating states of a device) is defined by a number of predefined operation states connected by transitions between operating states triggered by predefined inputs. That is, a first predefined input may trigger a transition from a first operating state to a second operating state. The transition, however, does not itself constitute a operating state. Rather, it is a transitional period where the current operating condition of the first operating state are changed to the target second operating state. Applicants suggest that the Office Action is misinterpreting this transition period wherein the operating condition of Kim's printer are being transitioned from the printing state to the non-printing state as constituting a separate operating state in itself. If this were true, than another set of conditional inputs would be necessary for triggering a second transition from this transitioning state to the printer's target non-printing state.

Applicants further note that the limitations of now cancelled claim 4 have been incorporated into its base claim 1; the limitations of now cancelled claim 12 are incorporated into its base claim 8; and the limitations of now cancelled claim 23 have been incorporated into its base claim 21. Independent claims 1, 8, and 21 now require that a method step or mechanism to assure that print data is discarded and command data is not discarded while the printer is in said first state.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

Respectfully submitted,

/Rosalio Haro/
Rosalio Haro
Registration No. 42,633

Please address all correspondence to:

Epson Research and Development, Inc.
Intellectual Property Department
2580 Orchard Parkway, Suite 225
San Jose, CA 95131
Phone: (408) 952-6131
Facsimile: (408) 954-9058
Customer No. 20178

Date: November 17, 2006